CLIMATOLOGICAL DATA FOR FEBRUARY, 1912.

DISTRICT No. 10, GREAT BASIN.

ALFRED H. THIESSEN, District Editor.

GENERAL SUMMARY.

In contrast to February, 1911, which was a very cold month, being about 5° below normal with nearly normal precipitation and unfavorable weather for farming operations, the stock also suffering considerably, the weather during the present February was generally mild, pleasant, and dry, being very favorable for all outdoor work, and the stock and ranges being in excellent condition. The temperature was considerably above normal, while the precipitation was less than half the normal amount. On the average the number of rainy days was 4, clear days 10, partly cloudy days 9, and cloudy days 10.

TEMPERATURE.

The mean temperature for the district was 33.5°, which is 2.2° above normal. In calculating the departure from the normal only those stations having long records were considered. Temperatures above normal were reported in all States having areas in this district. The mean monthly temperatures ranged from 15° at Border, Wyo., to 49.7° at Jean, Nev. As a rule the lowest means occurred in the Idaho and Wyoming areas and in the higher stations in Utah, and the highest means in the Oregon area, western and southern Nevada, and in the protected valleys in Utah.

Of those stations having normal, Tecoma, Nev., reported the greatest plus departure; there the mean temperature was 35°, which is 9.9° above normal. Only a few stations reported minus departures. Tooele, Utah, had the greatest minus departure, its mean being 31.2° or 1.6° below normal.

The temperature during the month was remarkably equable, and no very low temperatures were reported at any station.

As a rule, the first two decades were the warmest and the last the coldest. The highest temperatures occurred on or about the 9th and the 17th. The highest temperatures were 55° at Cokeville, Wyo., on the 17th; 59° at Grace, Idaho, on the 7th; 80° at Wendover, Utah, on the 17th; 55° at Paisley, Oreg., on the 13th; 54° at Truckee, Cal., on the 26th and other dates; and 79° at Jean, Nev., on the 29th.

The lowest temperatures occurred during the last decade as a rule, and the lowest reported were: −20° at Border, Wyo., on the 29th; −11° at Paris, Idaho, on the 29th; −12° at Thistle, Utah, on the 20th; 5° at Cliff, Oreg., on the 25th; 6° at Truckee, Cal., on the 24th; and −3° at Halleck, Nev., on the 1st.

The greatest monthly range for the district was 72° at Cokeville, Wyo., the highest being 55° on the 17th and the lowest −17° on the 29th.

The greatest daily range was 63° at Iosepa, Utah, on the 29th when the highest was 75° and the lowest 12°.

PRECIPITATION.

The precipitation for the district averaged 0.60 inch, which is 0.84 inch below the normal. The greatest amounts fell in the Utah, Idaho, and Wyoming areas, and the least in the Nevada and California areas.

In the Nevada area the precipitation averaged nearly 1 inch below normal and the section director of that State writes:

> This is the second driest February on record, the only lower record being 0.20 inch in 1896. There were 22 stations at which no measurable precipitation fell, and some of these are located in regions where February moisture is usually heavy. The only places where the amount was reported to be normal are in Elko County, and as these stations have recently been established they have no normals. The monthly amounts are very small at nearly all stations outside of Elko County, but the greatest negative departures are in the extreme west portion including the Lake Tahoe district, where practically no snow was added to the amount in storage. The season to date is one of the driest of record.

The greatest monthly amount was 2.40 inches at Milford, Utah. In the California and Nevada areas, where the minus departures were exceptionally large, very small monthly amounts were reported, and eight stations there reported no rainfall whatever.

The greatest 24-hour amount was 1.40 inches at Whiskey Creek, Utah.

The first three days were generally fair in all parts of the district. On the 4th rain set in in Oregon, and by the 8th precipitation was general over the entire district. Precipitation continued until the 28th, but the storms were local and widely scattered for the most part. As a rule the daily amounts were very small.

At the close of February the prospective water supply was not promising. The snowfall, while heavier than that of January in Utah only and lighter in most of the other States, was insufficient to bring the stored amount to normal.

THE COOPERATIVE WEATHER BUREAU OBSERVERS OF UTAH.

By J. CECIL ALTER, Observer, Weather Bureau, Salt Lake City.

The eastern capitalists had spent several days in the Salt Lake office of the Weather Bureau with their engineers, comparing, calculating, and correlating the weather data of a certain region in the State, in their relation to an irrigation project which would reclaim an extensive area of land and create homes for several hundred families. It appeared from the records that the climate of the place was splendid, all that could be desired for making pleasant homes and for maintaining an ample water supply. The closing of the deal hinged on the weather records, which were favorable, but, since a hundred thousand dollar proposition was to be decided solely on the evidence of one cooperative weather obser-

ver's records, one more query was very pertinent: Is the observer sufficiently reliable to warrant the placing of a hundred thousand dollars on his readings of the Government weather instruments?

While this episode is only typical of the preliminary procedure in a great many instances of the placing of new communities on the map, there probably never has been an instance where the personality of the observer, and his integrity, have not fully warranted faith in the published records, where they cover a period of years. It is true that there are occasionally records supplied to the bureau by unreliable observers, but such records practically never come to light in print, and the observers find the work too objectionable to be continued long. There is no pay for the work of recording the weather conditions at these auxiliary stations of the bureau, and the service is almost exclusively performed out of the goodness of some heart that has come to love the work, and is interested in it; and, after all, no financial consideration could really be compensation for a service rendered merely for the joy of the doing. Moreover, the record that is made for the love of it will be as accurate as the instruments and the observer's intelligence will allow, for the same reason that the greatest productions in art, in literature, and the handicrafts have not been made on a wage, but for the joy of the making.

A very large majority of the observers do not use the weather data in their own business to any financial advantage, nor are they employed by corporations, which occasionally include this service among their duties, but they do it because they are interested in the work. The day for them would be incomplete without visiting the instruments and recording the observations, and incidentally comparing the values with yesterday's weather or with last year's records, or with the normal values; and the life and the character of the man with such a pastime would not be complete if he did not perform the service honestly and accurately. As a matter of fact we can not conceive of anyone finding a pleasure in a service that is carelessly done, and if there is no pleasure in it there is absolutely no reason for doing it. So a careless observer soon turns the instruments over to a successor who has the needful public spirit and willingness to do something for his community, and who finds a fascination in the instruments and their operation. It is said that "a bad workman quarrels with his tools," yet there are delicate thermometers at some of the stations in Utah that have been in use more than 20 years, and a great many that have been read and handled in safety for 10 or more years.

While the Utah section of the climatological service of the Weather Bureau is one of the later ones organized, it has several records that have been kept for more than 20 consecutive years by the same observer; and in at least two of these instances the instruments were transferred to other observers only after the funerals of the old observers. A number of other observers who have neared, or passed, the fifth of a century mark in the taking of daily temperature and precipitation observations are still mailing their carefully and fully prepared reports to the section center at the close of every month just as they did in their younger manhood.

A horticulturist moved into a Utah community 30 miles from a railroad a quarter of a century ago, and a little more than 22 years ago he received thermometers, some of which he still has in use, and a rain gauge from the United States Signal Service of the Army, and began making weather observations. His record is complete for the entire 22 years and every entry is no doubt as accurate as the instruments themselves. His files, which contain the entire original records, have been produced as evidence in the district court in settlement of controversies, and the local newspaper has regularly published his reports for a great many years. This gentleman is in his 78th year and believes he is "good for another 20 years of observations." It has been said of his records that they have done more to attract attention to his community than all other influences combined.

Another observer, a great many miles from a railroad, has kept a continuous record from Government standard instruments for 21 years, and has the originals of every month's observations on file. His records are looked upon as "official," and his townsmen depend upon him to give them all the weather facts they need. He is a farmer and stock raiser, in his seventy-ninth year, and has always been interested in weather observations, having kept records from his own instruments long before securing the Government equipment.

A millwright, born in Scotland 68 years ago, has kept the weather records in a Utah community for 20 years at a point 35 miles from the nearest railroad, having begun when the railroad was many times this distance away. He has done this, he says, because he "likes it." His records are published regularly in his local newspaper.

A retired sheep and cattle rancher in a mountain community has given up all his duties of 19 years ago and turned them over to his sons, except taking weather observations, and, while he is in his eighty-first year, he is of the opinion that his "natural instinct for the duties" will be with him a long time yet. The citizens of his community rely implicitly on him for weather information, and through his careful educating of them in actual weather conditions for two decades they have largely abandoned their interest in weather folklore and general signs and now look to him for facts. His records also have been introduced as competent evidence in court cases in his county.

This gentleman also kept records prior to receiving the Government instruments, and has an incomplete record for about 40 years. Since his present instruments are standardized he has frequently been called upon to test and compare other thermometers for his townsmen. When men will render service like this for the mere pleasure of it, it is not probable that the accuracy of their records will be questioned.

Sixteen consecutive years is the record of another man who, at the age of 74, is as careful and faithful an observer as there is in the service. Living on a farm, his curiosity at first impelled him to take up the work, but thereafter his interest increased by watching and comparing the seasons and the planting and harvest times of his crops. His 17-year file of records is frequently consulted by his neighbors. The only criticism ever made of his records is that his thermometers do not record like many of the cheaper thermometers in that neighborhood. A cursory examination of his records shows them to be made by a very painstaking and careful person, who does his work mainly for the love of it.

Another farmer, also living at some distance from a railroad, as most farmers do in Utah, in his seventy-fifth year, has finished his sixteenth consecutive year as observer.

A stock raiser and farmer in the mountains of the southern part of the State, far from where the sound of

the locomotive whistle will ever reach, 65 years of age, has acted as observer 14 years with great credit to himself, his community, and the Weather Bureau, and he has 12 years' original records on file, which is frequently consulted by the citizens there.

A postmaster, "56 years young," has 14 years' original record in a mountain community in the northern part of the State, and the entries show that a great deal of pride must be taken in the work.

Perhaps one of the most complete and well-made records of observations in the State is made by a railroad agent, who has been reading the instruments daily for 13 years. He is 59 years of age, and his records are consulted and considered reliable by interested citizens in his locality.

A florist and park gardener, 58 years of age, has been observer for 13 years, and has a 10-year file for guidance in handling his plants. The citizens in his community regard him as an authority on the weather quite as much as on horticulture.

A farmer and stock raiser in the central part of the State, about 70 miles from the railroad, has 12 consecutive years of original records on file, and has rendered the service because he "wanted to get the reports." He is 56 years of age.

A farmer and horticulturist in the southern part of the State, 75 or more miles from the railroad, has kept weather records continuously for about 12 years, all of which he has carefully filed away for reference, for his own advantage and the assistance of his neighbors and the public.

A rancher in a northern county, who is 65 years of age, has 11 consecutive years of his own observations on file.

A farmer in the southeast part of the State, 58 years of age, has obtained and filed 10 years of records "for the love of it." Another rancher, 60 years of age, who is also an official in a western county, has taken 10 years' records without interruption. A railroader, 52 years of age, in a northern county has been a faithful observer for 10 years; so, also, has a cattle rancher two counties away, 64 years of age, both of whom have frequently supplied information to homeseekers.

An interesting feature of the personnel of the cooperative service is that a father very frequently leaves the observations to a daughter or the wife during his temporary absence perhaps much oftener than he leaves it to a son. Another interesting item is that a majority of the observers are farmers, ranchers, or horticulturists, although many other occupations are represented.

It must not be overlooked that a few women are among the regular weather observing force, and their records have every appearance of being made with all the care and precision possible. A lady on a far-away ranch in a southeastern county some 50 miles from a railroad has acted as observer for several years, with only occasional brief interruptions. Her business is that of "a very busy housekeeper." She assumed the duties nine years ago when the previous observer, also a lady, moved back to civilization, and has continued them faithfully ever since.

The youngest observer in the State, perhaps, one who so far has only a short record to his credit, is only 19 years of age, born after many of the records were well under way. He reports that his wife looks after the observations when he is absent. They reside on an arid or nonirrigated farm in a western county.

Many observers became connected with the work "by being requested," as they say, yet in all cases where observations have been continued more than a few months with care and regularity the observers have been personally interested in the work. This interest is a necessary requirement for the making of a good observer. The bureau makes it perfectly plain to every observer that if the duties are irksome or uninteresting they should not be continued by that observer indefinitely, and thus the service comes to be made up of a class of people peculiarly fitted by nature and instinct for this invaluable work for their community and their State; and the capitalist who stakes his money on the integrity of the cooperative weather observer can never go very far wrong.